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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,557	07/16/2004	Ronan Garrec	255261US0PCT	5138
22850	7590	07/05/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER SELLMAN, CACHET I	
			ART UNIT 1762	PAPER NUMBER
			NOTIFICATION DATE 07/05/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.		Applicant(s)	
	10/501,557		GARREC ET AL.	
	Examiner		Art Unit	
	Cachet I. Sellman		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/5/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/5/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/5/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 21-23 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boire et al. (US 6103363) in view of Nakada et al. (JP 08302856) and Fujitsu Ltd (JP 01212441 A).

Boire et al. teaches a process for applying a photocatalytic coating to a glass substrate in order to promote self-cleaning and which has an external surface that is hydrophilic and/or oleophilic (abstract and col. 3, lines 56-59). The glass substrate comprises a glazing unit comprising monolithic or laminated glass with a layer of photocatalytic TiO₂ (col. 6, lines 37-41, and col. 2, lines 15-67).

Boire et al. does not teach removing at least silicone pollution from the substrate using an electrical or a flame treatment as required by **claim 21**.

Nakada et al. teaches a glazing unit which is sealed using a silicone sealant material and a process for removing silicone oil of the sealant material from the glass substrate (coated with titanium oxide) so the sealing is only on the area to be sealed.

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The silicone is removed by irradiating the photo catalyst coated glass with sunrays, which decomposes (removes) the dirt (silicone oil) on the glass [0008-0010].

Fujitsu Ltd teaches a process for removing silicone resin from a substrate by exposing it to oxygen plasma while applying heat then dissolving the film with a water solution of hydrofluoric acid (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Boire et al. to include the silicone sealant of Nakada et al. One would have been motivated to do so because both disclose processes of forming laminated glass used for building material that have antifouling properties and Boire et al. is absent on what is used to seal the glass together to form the laminate and Nakada et al. teaches silicone as an operable sealant therefore one would have a reasonable expectation of success in sealing the glass using the silicone sealant.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Boire et al in view of Nakada et al. to include the contaminant removal process of Fujitsu Ltd. One would have been motivated to do so because both disclose processes for removing contaminants from a glass surface and Fujitsu Ltd further teaches that using a oxygen plasma is beneficial in the removal of silicone resin therefore one would have a reasonable expectation of

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success in thoroughly cleaning the glass by additionally exposing the substrate to an oxygen plasma as taught by Fujitsu Ltd.

As taught by Fujitsu Ltd, a plasma treatment is used as required by **claims 22-23**. As stated above, the substrate is hydrophilic and oleophilic (col. 3, lines 56-60) as required by **claim 25**. Boire et al. teaches that the titanium oxide layer is of the crystalline nature, anatase and/or rutile (col. 8, lines 13-18) as required by **claim 26**. Boire et al. also teaches that the surface is textured (roughened) to enhance the wetting properties (col. 4, lines 42-49) as required by **claim 27**. Boire states that the glass can have a layer of silicon oxycarbide to serve as a barrier (col. 8, lines 55-57) as required by **claim 28**. Fujitsu Ltd teaches washing the substrate with a water solution of hydrofluoric acid as required by **claim 29**.

6. Claims 21 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boire et al. (US 6103363) in view of Nakada et al. (JP 08302856), RD439069A and Morgan (US 2383470).

Boire et al. teaches a process for applying a photocatalytic coating to a glass substrate in order to promote self-cleaning and which has an external surface that is hydrophilic and/or oleophilic (abstract and col. 3, lines 56-59). The glass substrate comprises a glazing unit comprising monolithic or laminated glass with a layer of photocatalytic TiO₂ (col. 6, lines 37-41, and col. 2, lines 15-67).

Boire et al. does not teach removing at least silicone pollution from the substrate using an electrical or a flame treatment as required by **claim 21**.

Nakada et al. teaches a glazing unit which is sealed using a silicone sealant material and a process for removing silicone oil of the sealant material from the glass substrate (coated with titanium oxide) so the sealing is only on the area to be sealed. The silicone is removed by irradiating the photo catalyst coated glass with sunrays, which decomposes (removes) the dirt (silicone oil) on the glass [0008-0010].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Boire et al. to include the silicone sealant of Nakada et al. One would have been motivated to do so because both disclose processes of forming laminated glass used for building material that have antifouling properties and Boire et al. is absent on what is used to seal the glass together to form the laminate and Nakada et al. teaches silicone as an operable sealant therefore one would have a reasonable expectation of success in sealing the glass using the silicone sealant.

'069 teaches a process of successfully removing silicone or organic contaminants from a metal component that does not require expensive equipment to determine if contamination is removed (abstract and advantage sections).

Morgan teaches a process for cleaning the surface of glass of contaminants or foreign particles by flame treatment because conventional techniques for cleaning such

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as chemical cleaning are not successful in thoroughly cleaning the glass (pg. 1, lines 42 and pg. 2, lines 1-9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Boire et al in view of Nakada et al. to include the contaminant removal process of '069 and Morgan. One would have been motivated to do so because both disclose processes for removing contaminants from a glass surface and Morgan further teaches that using a flame treatment is beneficial because it insures a thorough cleaning of the glass over previous treatments and '069 teaches that flame treatment removes organic contaminants and silicone from substrates therefore one would have a reasonable expectation of success in thoroughly cleaning the glass using the flame treatment as taught by Morgan and '069.

As taught by Morgan and '069, flame treatment is used as required by **claim 24**. As stated above, the substrate is hydrophilic and oleophilic (col. 3, lines 56-60) as required by **claim 25**. Boire et al. teaches that the titanium oxide layer is of the crystalline nature, anatase and/or rutile (col. 8, lines 13-18) as required by **claim 26**. Boire et al. also teaches that the surface is textured (roughened) to enhance the wetting properties (col. 4, lines 42-49) as required by **claim 27**. Boire states that the glass can have a layer of silicon oxycarbide to serve as a barrier (col. 8, lines 55-57) as required by **claim 28**.

Response to Arguments

7. Applicant's arguments, see pages 5 -6, filed 6/5/2007, with respect to claim 21 have been fully considered and are persuasive. The applicant argued there is no

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motivation to combine Boire in view of Nakara with Morgan or Dunoyer to overcome the limitation of removing silicone because neither Morgan or Dunoyer alone teach removing silicone from the glass substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cachet I. Sellman whose telephone number is 571-272-0691. The examiner can normally be reached on Monday through Friday, 7:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cachet I Sellman
Examiner
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/William Phillip Fletcher III/
Primary Examiner

June 25, 2007